

THE ZOOLOGIST

No. 849.—March 15th, 1912.

AN OBSERVATIONAL DIARY ON THE DOMESTIC HABITS OF THE RED-THROATED DIVER (*COLYMBUS SEPTENTRIONALIS*).

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July 13th, 1910.—Whilst walking amongst the maze of small lakes or pools with which the country where these observations were made is studded, I saw, at first, a single grown Red-throated Diver, with two young ones. I at once crouched, and watched them swimming about together, for a little. I supposed the old bird to be the female but, before long, another appeared, and I then saw that it was the larger of the two—therefore probably the male. The new-comer had something in its bill which I at first thought was a fish, and afterwards a bundle of weeds; this she put down on the water in front of the chicks, just as I have seen Grebes and Swans do. Young Red-throated Divers, therefore, may be fed, at first in the same way. This pair were still unhatched last Saturday—it being now Wednesday. On another and smaller pool I saw a nest which the young had also recently left. It was just on the peaty margin of the pool and was like a rudimentary Grebe's, being much less raised, and not nearly so finished-looking. It seemed to have been made by the bird—or birds—having placed more of the soft peaty earth above the natural level of the pool's margin. No doubt it had been much pressed down by the weight of the sitting bird, but it could never, I think, have been anything but very flat.

Zool. 4th ser. vol. XVI., March, 1912.

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July 14th.—About 4 p.m. I started out over these northern hills, to see something of the Red-throated Divers, several pairs of which haunt some of the smaller lakes or sheets of water in the vicinity, with their recently hatched young ones. After walking about an hour and a half, I came upon a single bird swimming with two quite small chicks in a pool—for it was no larger—amidst the peaty hag. The old bird was not very shy—evidently through the unfrequency of human intrusion—and when I had crept up under the crest of a small rise or hillock, and lay flat on the ground, with my glasses, she soon became quite unconstrained in her movements, though I was certainly not invisible to her. After swimming about, for a little, the young ones always following her, she approached the shore, and made as though to crawl out on to it. She was, I think, for a moment or two, partly on the land, but the place was evidently unsuitable, and she came swimming out again—she had almost disappeared—to the opposite side, and here, in my full view she, with an impetus such as, when about to land, one communicates to a boat, drew herself out amidst some green sedgy herbage, where she lay or sat, with her head raised, just as though upon the nest, and raising her wings, the young ones immediately ran in under them—one under each—on which she closed them down, and sat quietly. This was at 5.30, and the young were quite invisible for the next hour, when one of them came out, but, the mother raising that wing, again, he, at once, went back, and the bird sat on, as before, till 7.30, when I walked further on, but at 8 I saw all three on the water again. I then lay down under another rise, and, in a very few minutes the same scene was repeated, the parent bird landing this time where the bank was a little higher and not sedgy, to do which she had to make a greater effort than before. In neither instance did she rise on her feet after landing, but dragged herself flat along the ground, and I left her thus seated, with the chicks invisible, as before. This last time I noted that one of the chicks preceded the mother (?) in landing. Evidently they knew her intentions, and were in agreement with them.

My reason for leaving at 7.30 had been that another Red-throated Diver had then circled round about, flying quite low over my head, so that I distinctly heard him snap his bill,

before uttering his guttural note. I felt sure that this was the male, come to join his wife and family—as there is little doubt he would have done had I not been there. I thought he might return and do so, if I went away, but in this I was disappointed. Three others of these Divers went down upon a much larger loch, some way off, whilst I was watching the one with her chicks. Two appeared to be mated, and one flew several times after one of the others, over the water, as it seemed to me, in an amatory manner. There was some appearance, in fact, of a “recrudescence”—but whether a second brood is ever reared by these birds I do not know.

July 16th.—About midday I got to a loch where I had before seen (on the 13th, namely) a family party of Divers—the parents and two young ones, before whom one of the former—the mother, as I judged—had put down on the water what at first I took to be a fish, and afterwards a bunch of weeds. A considerable time was now spent in trying to find a good place from which to watch the birds, being myself unseen. This was extremely difficult, or rather impossible, and as it involved creeping, crawling or dragging myself along the ground, almost all round the loch, with intervals of lying and waiting, some two and a half hours were thus occupied, during the greater part of which time all the birds were invisible. At last I again saw three of them, one of the parents having, in spite of my very great caution, taken alarm and left the loch, though this he might have done in the ordinary course of his duties. It was about 2.30 when I, at last, found a spot which offered me both a good view of the greater part of the water, and a shelter from the wind, which, ceaseless as it is, and, even at this time, tolerably cold, is a terrible factor in these treeless wastes. Such protection as I now enjoyed was given by the peaty bank of what seemed to have been once a continuation of the loch the birds were on. It was now a flat oval depression sunk somewhat beneath the level of the present water, which seemed to have shrunk away from it, so that, seated upon its flat, grassy bed, with my back against the low escarpment, my head was not much above the level of where the birds floated, and this did not seem to alarm them.

In about ten minutes after settling myself, there was a

gliding splash upon the water, and, looking up, I was just in time to see the bird that had been absent settling upon it. He had now an unmistakable fish in his bill, and, as though to confirm this, a Lesser Black-backed Gull stooped twice or thrice towards it, as if with the idea of seizing it from the Diver's beak. The latter, who did not seem at all intimidated by this action, now swam towards the partner bird and chicks, diving more than once on his way to them. As he came up, the last time, the chicks swam to him, and he put down the fish on the water, before them, just as he had done on the 13th with the supposed weed, which I now think must have been a fish too. Presumably one of the chicks ate the fish, and a choice as to which should have it may have been exercised by the parent bird, but all this—as also on the last occasion—I was unable to see. In regard to the fish, it did not look to me like a trout, but of a longer and straighter shape, more like a sand-eel. This, taken in connection with the bird having flown down on to the loch with it, and its previous considerable absence, seems to suggest that the young are fed with fish from the sea, and not from one or other of the fresh-water lochs, amidst which these Divers breed. Some of these, indeed, are so small that one can hardly suppose them to contain fish, and it was on one of the smallest that I watched a pair, with young, on the 14th. Others, however, are larger and well stocked with trout, and of these there are two, in close proximity to the one which this pair has appropriated.

After the above incident the birds swam quietly about the little loch, sometimes all together, but more often the two parents would be separated by a little, and then sometimes each would be accompanied by a chick. But this was never for long. Very soon both would be paddling near one of them, and this was always the case when there was any wide interval between the two.

At 3.30 one of the parents, thus accompanied, swam to the far end of the loch, where, just round a little grassy point, the old bird took the shore. Of this, at least, I felt sure, since I could see its head above the grassy projection, higher than it would have risen from the water, and always in exactly the same place, up to 6.0 p.m., when I left; and I might also assume, from what I had seen before, that the chicks were resting, one under each wing—perhaps asleep.

During all this time the other parent, which I then took to be the male, either remained motionless, or almost so, on a particular part of the water, some way off, or swam up, at intervals, to where the others were resting. This he did some three or four times, but only once—the first time—went close to the point, and then, all at once, I saw one of the chicks with him, though I had missed seeing it swim out. In a minute or two it returned to the resting-place, whilst the parent swam down the loch again. I was struck by the way in which, for a long time, this latter bird kept just, as it seemed, on one spot of the water, but at any rate in very much the same place. Another thing that struck me was the infrequency with which the chicks were fed. I assume that from 12 to 2, during all which time I could see nothing either of them or the parents, they were resting under the wings of either one or the other of the latter. From 2, or at any rate from 2.30 to 6, I was able to account for them, and only once was a fish brought in, as recorded. This, presumably, was eaten by only one of the chicks, so that for 6 hours, as a minimum, the other of them had had nothing. The chicks never appeared to feed themselves, and the only time they dived was when a gull made a sort of stoop at them. They were then at some distance from the parent accompanying them, and disappeared all in a moment. Evidently, young though they are, they know how to take care of themselves.

July 17th or 18th.—Got to the loch again, and into proper position, at about 6.20 p.m., and had the pleasure of seeing both the parent birds, with their young ones—the whole family—together. They presented a very pretty picture, the old birds gliding slowly and gracefully about on the water, now swimming affectionately together, as it seemed, now separating a little, when, for the most part, each one drew a chick with it, and I could not now observe that the latter looked more to one of their dams than the other—each of them sometimes having both for a little. For a considerable time, both of the old birds, thus accompanied, kept swimming or gliding between a certain point of the shore, and a little way out again, and I noticed that one—I think the female—was the leader in this monotonous activity, the other following, as it were acquiescently, but not going so far. This was towards the lower, or, rather, my end of

the loch, but, about 6.45, one of the birds—the male as far as I could feel sure—began swimming up it, in a purposeful manner, accompanied by one only of the chicks—the other staying with the mother. The male, if it were he, swam, with this one chick, to the exact spot where either he, or his mate, had rested yesterday, with the two of them, and, behind it, they disappeared, and for the next hour or hour and a half the surface of the loch knew them no more. The mother and remaining chick kept where she had been, or swam from there to about the centre of the loch, which was not very far. They often became almost invisible, for it had come on to rain in fitful showers, or mists arose which had the effect of making the little loch look as large as a widely extended one. Whilst it was still clear, however, an interesting incident occurred. I had the glasses on the parent bird, and saw her whole aspect change, in a moment, as she shot suddenly forward and then reared herself high above the surface of the water, showing almost the whole of the smooth and gleaming white under surface. Almost at the same moment another Red-throated Diver came into the focus of the glasses, as I slightly moved them, a few yards in front of the first one, and swimming fast away from her. Evidently it was a stranger bird that had come down on the loch, whilst I had the glasses up, so that I did not see it fly in, to meet with this hostile reception.

The pursuing bird reared itself, again, in anger, shot forward, and then dived. It came up, again, close to where the other had been, and then, rising from the water, flew after it, disappearing, as the stranger had done just before, within a little bay of the loch. The next moment, the intruder came flying over the rising ground that had hidden him, and the victorious guardian reappeared suddenly by its chick, from beneath the water, having dived back to it.

Some time after this—about 8.15 or 8.20 p.m.—the parent and chick swam up to the other end of the loch, where they disappeared in the mist. A few minutes later I saw, probably, the same parent swimming down fast, alone, in a very purposeful manner. She made straight for the bay from which she had recently expelled the stranger bird, and, disappearing into it, there was almost immediately a similar flight out. My reading

is that the parent with whom the one chick had remained, when the family separation took place, had conducted it to its partner, to rest with the other one, and then, catching sight of the same strange bird, that had returned without my remarking it, had hurried down to expel it once more. Having done so, it dived out into the body of the loch, as it had on the previous occasion. After this I saw the two chicks—first alone, and then with one of the parents, at the farther end of the loch, near the point where they had been resting, and here, at 9 or 9.15 p.m., they disappeared, and the loch now seemed empty.

Probably the three were again resting, for the short night, where they had been before, whilst the partner bird had flown away. The latter, however, might have been resting too, but had I sat still where I was, the whole time, instead of leaving my position, a little previously, to ascertain something which I might very well have left alone, I might have been assured in regard to this. When one is unobserved, and has a good post for observation, in general, it is a mistake to quit it for any observation in particular, unless this is very important indeed—as was by no means the case here.

Before this, I had observed another pair of young Red-throated Divers diving as if for food, whilst their dam floated near them, though I could never detect anything in their bills when they came up. I also saw these chicks—I think both of them, but, at any rate, the act was more than twice repeated—rear themselves out of the water, and touch, with their bills, the bill of the dam, who, however, made no response to this action.

The action of the bird to whom, with its mate, the loch belongs, as one may say, when the stranger Diver came down upon it, was very interesting to see. Its whole look and aspect was instantly transformed, and the change from gentle placidity, with graceful, sinuous contours, to violent motion and a much more angular style, was most dramatic.

It was not far short of 10 when I set off home. It was raining, and the mists were lying thick on all the higher eminences. Before very long, I had completely lost my way, and in deep gloom, with a white sea all around me, I had nothing to do but to wait till it lightened and the mists lifted. I alternately walked up and down, sat or lay down, trying in vain to sleep

under the overhanging peat-bank of some dried rivulet, until the short night had passed. It was still misty, all the old landmarks were either lost or looked different, and it was not till 4 a.m. that I eventually got back, after an awful experience, and too tired to sleep properly.

July 19th.—*In situ* again, at 3.10 p.m., and saw one of the parent birds, with one chick, at the lower end of the loch, just as was the case for a considerable time, yesterday, in the evening, whilst the other parent, with the remaining young one, were (presumably) resting on the shore's edge, at the other end. Whilst creeping to my place, another of these birds had flown over my head, but I doubt its having been one of the pair. In any case, it did not seem to notice me, but flew steadily on, without any cry. Had it done so, it would probably have circled, for some time, about, uttering its guttural note of disquietude.

I have come, prepared to pass the night, and have nothing to do now, but to keep still, and not, except for some very special cause, leave my place.

The parent and chick keep moving slowly, backwards and forwards, on the water, within a certain small space, and, usually, on the same spot.

3.45 p.m. The other parent flies down on the water (coming from afar) and, diving its way to the two, gives, I feel sure, a fish to the chick. Unfortunately, not expecting such celerity, I did not get the glasses up in time to see either the fish given or the chick take it, but certain movements of the latter, afterwards, leave no doubt in my mind that it has been fed. It keeps stretching up its head, and making various motions of the throat and neck (external and internal) which suggest only one thing, *viz.*, that it is getting something down. Moreover, the upper part of the throat has a swollen appearance. There can be no doubt, therefore, I think, that the chick has been fed. The parent who has thus flown off, and returned with food, is, to judge by the relative size of the two, the female—but where, all this time, is the other chick?

3.51. The bird that has come in, and fed the chick, flies off the loch again. It passes close to where I sit, flying low, and does not appear to notice me.

4.45. The male, as I take it to be (the mother being still away) swims up the loch, with the one chick, to the little point, behind which it seems usual for the birds to rest. He disappears round it, then swims out again, and, to my great joy, both the chicks are now with him. The absent one, it seems, must have been resting there, alone; I had feared that some evil had befallen him, that he had fallen a prey to some gull. In a minute or two the male passes again round the point, with his chicks, but very soon they are all three out again, and swimming down the loch.

Just on 5. All three have now disappeared without my noticing where they went, but I think they must still be at the nearer end of the loch. I would fain know whether the nest is round the little point where the birds rest, but cannot find this out without disturbing them.

As yet, then, both these young Divers are safe. I noted the threatening action of a Gull towards one of them. Yesterday, and, to-day, a Great Black-backed has made several nasty-looking stoops towards the one chick that was then on the water. He varied this by flying over to a young Gull that was crossing the loch, and making the same demonstration, so that, at last, the latter stopped paddling, and seemed in fear—but "it passed." Why did it pass? The young Gull could have made no effective resistance, if attacked, and there was no parent there, to defend it—at least I could see none. The Gull seemed, as it were, to hint what he "could do an' if he would," but the matter went—and from what I have observed generally does go—no farther. In view of the facility with which reasons for destroying any species are coined and administered, I cannot lay too much stress on this. The bark of these Gulls is, indeed, much worse—at least much more frequent—than their bite. Sometimes, no doubt—as I have seen—they do kill a young bird or so, the proper and philosophical answer to which is: "Let them." It is horribly amateurish and mistaken to seek to interfere between one wild species and another. Only let man, himself, stand aside, and all will be well.

At 5.9 the trio that have been, all this while, resting unseen, reappear from behind the point, and swim down the loch, and at 5.23 they swim up, and disappear round it again.

It is now 5.45 and they are still there, nor has the female, who flew away, at 3.51, yet returned.

At 5.55, I see the female on the loch again ; she has evidently but just come down and has a fish in her bill, which looks like a sand-eel—carrying it, as does a Guillemot, lengthways within her bill. With this she dives right up the loch, and then swims round the point, with it, where the other three have, all the time, been. One of the chicks appears, for a moment, just beyond the point, tail first, and disappears round it, again. Then the female comes out from it, swims to the opposite side, dives to the end of the loch, then swims back, preening herself, rises on the water and flaps her wings, turns on her side, as it were, showing the white, gleaming breast and ventral surface, thrusts out a leg behind, and waggles it, &c., all as does the Great Crested Grebe, which, in their actions and domestic life, these birds seem greatly to resemble. The three are still (at 6.15) invisible behind the point, and the mother floats alone, quietly now, and doubtless “with the gratifying feeling that her duty has been done,” on the still surface of the little loch. It must, I think, be the mother, for she certainly looks considerably smaller than the other parent bird. While thus resting, a pair of Black-backed Gulls that have—or rather have had—their nest upon the banks of the loch, at this lower end, take umbrage, apparently, at her proximity and fly over and around her, in a half threatening way, causing her to look conscious, and prepared for any act of hostility.

Now, at 6.35, she swims up the loch, and one of the chicks comes out from the point, to her, but soon goes back behind it again. But for this slight emergence, and the previous one, when the fish was brought, the male Diver, and the two chicks, have been stationary behind this point of land—for there is no stretch of water beyond it—ever since 5.23. Anyone would think that the loch was occupied solely by the female bird, who, having regard to what occurred yesterday, would seem to act the part of sentinel and guardian of the family domain.

6.50. The rest of the family now appear round the little grassy projection, and swim down the loch, to join the female,

who, on her part, swims to meet them. I now carefully keep the two parents distinct, whilst examining them with the glasses, and, if size goes for anything at all, it is certainly the male who has been, all this time, with the chicks, for he is very considerably the larger of the two. Also it is the female who, now, again, at 6.55 rises from the water and flies away, and shortly after this, without being able to say how or where, I notice that the male and chicks have again disappeared.

Before flying off, again, the female had swum to the other side of the loch to that on which the three others, now hidden from view, are, at the other end of it; and it is noticeable that she seems to like to "take off" from this point, though she does not always do so.

When the parents joined, or swam near one another, one of the chicks would generally accompany each. Once or twice both swam to the mother, and then back again to the father, but, on the whole, if there was any difference, they appeared to look to the father as more especially their conductor.

At 6.30 the male and chicks appear at the farther end of the loch, swimming down it. Evidently they have been resting and stationary, in the usual place.

At 7.38 the female flies down on the water, but she brings no fish. The male swims to meet her, and the whole family proceed up the loch, to the point. It is now the female who rounds it, with the two chicks—the male remaining just off it. In a little she reappears, swimming a foot or two out from the shore, and then, turning and going in again. I just see, or think I see, that boat-like impetus with which the landing is accomplished. The male then swims down the loch, and, having got to the end of it, flies away at 7.49. It is always seawards that the birds fly, upon leaving. The largest sheet of fresh water here lies only a few dozen yards away from this one; yet they never go to it. It is, however, in all probability, the one that holds most fish, and indeed is known as such. This, and the fact that all the fish brought in have looked like sea-fish—they are, I think, generally, if not always, sand-eels—makes me suppose that the young of the Red-throated Diver are fed on sea-fish alone.

At about 8.45, the male (as I still think it, though not now

so certain) flies in with a fish. He swims up to the farther end of the loch, dives, but comes up farther from the point than where he went down, plays with the fish, then swims towards the point again, and is met, when some way from it, by the female and young. Presumably, then, one of the two chicks receives the fish, but this, in the light—which, though still a sort of daylight was not so good for the glasses—I could not make out. After this, the chicks divided themselves between the two parents, and after they had all swam about, a little, the male, as far as I could make out—it being now not so easy—swam, with his chick, round the accustomed point, whilst the female remained, and still, at 9.50, remains, with her chick at the nearer (that is, my) end of the loch.

As it grew gradually darker, observation became more and more difficult, but I continued to watch the mother and chick, and at last the mother only—the smaller spot having become indiscernible—till, at last, at 10.5, and when I could still see the larger one, it had, all at once, disappeared. Yet the patch of water on which it had been moving was darker altogether than the larger expanse over which the birds would have had to pass, to join the other couple, and where, had they done so, I would, I am sure, have seen both. I had swept this, at short intervals, with my glasses, all the time, and did again as soon as I missed the darker patch on the darker and smaller expanse, and for some little time afterwards. This going out, all at once—not, beyond a certain point, gradually—of these two birds I had been watching, is I think best explained by their having taken the bank, and by reason of this, and having regard to what I have just said, I may, I think, conclude that it is the habit of these birds, when rearing their young, for the two parents to pass the night, separated from each other and each with a chick.*

I now lay down against, and partly under, the low peaty bank of this former slight extension of the little loch—no doubt still such in the winter—making the best use of plaid, mackintosh, umbrella and Shetland shawl. Luckily the rain that fell after this was but slight, but there was no comfort, and but little, if any, sleep in the situation, and about 1 a.m. I was at my post

* See, however, *postea*.

again. At 1.40 the water was fairly distinct and from then till now—2.10—I have searched it with the glasses but seen nothing on its dun mirror.

At a little after 3 a.m., the male Diver—as I feel sure from his size and general appearance—comes flying, at a great rate, from seawards, and makes a fine descent upon the loch. He brings a fish, and diving with it to the point, stays a little, just off it, gives a paddle or two away—then back—evidently waiting. A chick then swims out to him, and receives the fish—how I cannot quite see; it has appeared, before, as though they were put down on the water in front of one or the other. It then goes back and the parent floats idly on the water.

At 3.35 another Diver, which I took to be the female, came flying out of the little bay of the loch, which, from my position—though the best for all-round observation—is only partially visible to me. I took it for granted that this was the other bird of the pair—the female—but a few minutes later, without having since seen a bird go down, either this same or another one swims out of the before-mentioned bay, that has not at all the familiar look and manner of the bird I know, but, in size and carriage, looks like another male, and has a strange, unassured manner. It seems to be a strange male, but the rightful male, still on the water, does not attack it, which seems odd, in the light of what I have previously recorded. After a while, however, he swims down and enters the bay, too—the other having gone back into it—and, as both are now invisible, I again unadvisably leave my place, and crawl up the rise which conceals them. I see, on looking over it, but one bird—the lawful one, I have no doubt, for he shortly dives up the loch as though bound for the accustomed resting place, but, on account of my changed position, I am unable to follow all his progress, and, on getting back to my place, he is nowhere to be seen—he may either have flown away, in the interim, or gone to his chicks. Shortly afterwards the other bird flies out by the bay, leaving me now in doubt whether it really was a stranger, or the female, after all. If so, she has, at any rate, brought no fish, and, if not, I have, as yet, seen nothing either of her or her chick. The male had evidently left the loch, in the performance of his parental duties, without my seeing him, in the dusk or darkness, but whether the fish

he brought back was for the particular chick I had last seen him with, yesterday, and whether the other is still where, or near where, I lost sight of it, I cannot say for certain, though this seems probable.

It was now between 4 and 5 a.m., and as it appeared that there would be nothing for me to witness, which I had not seen before, I thought that I would walk to a point on the coast, which, from what I had heard, might have some attraction for me—a decision which I have afterwards regretted—there is indeed nothing like keeping still and seeing all one can see, when one is certain that there will be something. First, however, I thought I would walk round the loch, as I wished to satisfy myself, if possible, as to where the birds sat behind the little projecting point, so often alluded to, and particularly whether it was on the nest or not. I therefore started to do so, but had not walked many paces before the male (as I think) went up from the accustomed place, and the two chicks then appeared on the water there. Going on, I found, round the little grassy point, a depression in the grass, just answering, in situation, to where, on the first occasion, I had seen the bird's head, motionless, above the level of the bank, and which was, self-evidently, the place where one or other of the dams are accustomed to sit, with one or both chicks under their wings, nor did this depression—roughly circular in form—bear any resemblance to the nest which I have seen, either in itself or in its situation. The nest itself, though I walked round the little loch twice, I was unable to discover. It appears, therefore, that at some time between 10.5 p.m. yesterday, when I last saw the mother and one chick by themselves at the near end of the loch, and its becoming light enough to see the birds at all, this morning, this mother's chick had joined the other under the charge of its father—but at what time this was, and whether the mother had sat with them, also, I do not know. The fact, however, of the depression in the grass I have mentioned being single and not double, and of there being no other than this one at any part of the bank, makes it probable that one parent alone roosts on the ground, in this way, with both the young ones, during the short night. I suppose, now, that the female bird went up the loch soon or just after I ceased to see them in the increasing dark-

ness. She may then have slept, herself, for some time, on the water, before flying off to get a fish for one of the chicks, or first, perhaps, to fish, for herself. The male had also gone off during this dark, or semi-dark period (the chicks being left alone), so that either these birds are wholly nocturnal, or stir with the first grey of morning. It can hardly be supposed, however, that they are able to catch fish before daylight, nor did I see one brought in until 3 a.m.

I am still puzzled in regard to the second bird that flew down upon the loch. I felt sure, at the time, owing both to its size and totally different and unassured manner, that it was a stranger and not one of the pair. It brought no fish and neither went to the chicks nor joined the bird already there, which I had felt no doubt was the male. But why the latter, under these circumstances, should not have attacked it, I do not know, but though the two were out of my sight, for a few moments, in the little bay, I am sure, from general indications and especially from the new-comer's remaining on the loch, that there was no unpleasant incident between them. The matter is perhaps best explained by its having been the female and not the male that first flew in with a fish, for possibly she would not attack a strange male, or the male a strange female, or, again, I may have been mistaken in supposing the second bird to have been a stranger, though rightly accounting him a male, so that it was really the pair after all—and this seems most probable, especially as the second bird dived up the loch, as though going to his accustomed place.

The swiftness of flight of these Red-throated Divers—as a species, of course, I mean—seems very remarkable, considering the bulk of their bodies and narrowness of their wings. I had thought that they could only be sustained in the air through the constant beating of the wings, but, the other day, I noticed one cease to beat them, and shoot a considerable way, holding them outspread and motionless, nor, so far as I remember, did this bird descend all the time they were thus held. No doubt, a powerful impulse being first gained, the bird might, by turns and shifts of the body, through which the wings caught the air at different angles, sometimes even ascend, for a little, without again beating them, but only, I should suppose,

whilst this impetus lasted, so that there would be no real floating, much less soaring.

The depression in the grass which I have spoken of, where the dams sits with the chicks, only corresponds to the size of one parent bird, so that this alone makes it evident that the two do not sit together, side by side. This is after seeing two such depressions, for I have since found the one on the quite small loch, or rather pool, where I first saw these siestas in progress. Here, too, there was no suggestion of a nest other than the mere depression caused by the weight of the bird. From all appearances it would seem that the young Red-throated Divers stay on the lochs, into which, as one may say, they are hatched, until able to fly off them, presumably with their parents.

(To be continued.)

NOTES ON THE BIRDS OF SARDIS, ASIA MINOR.

BY FLORA RUSSELL.

My handbook was the 'Manual of Palearctic Birds,' by H. E. Dresser (1902), and I have followed his nomenclature. We left Smyrna on March 15th, 1911, by the railway that joins the Konia line at Afion Karahissar. Smyrna harbour was full of Black-headed Gulls (*Larus ridibundus*), and where the line skirts the bay, north of the town, there were large flocks of Herring Gulls (*L. cacchinans*) as well. It was a fine spring day, the warmth most pleasant. The early fruit-trees were just blossoming, and anemones coming out, but the country showed traces of the severest winter for years. Olive-trees, the wild oleander, and myrtle were brown and withered by snow and cold winds.

At Menemen station the air was full of small Kestrels flying like Swifts. Later I saw these again at Pergamon and identified them as *Falco cenchris*. At Kassaba a flock of extremely tame doves (*Turtur decaocto*) were on the station shed. They were numerous on the roofs of the mosques at Magnesia and Pergamon.

Just before reaching Sart station, which is in the broad valley of the Hermus, we had the welcome sight of three Storks (*Ciconia alba*) following a man ploughing. Further on were a pair inspecting an old nest. I gathered that none had been observed until that day, and that March 15th is an early date for their arrival. Mr. Danford (see 'Ibis,' 1878) gives March 29th for the arrival of Storks in the Sihoun valley. Before we left on April 15th nests were occupied on all the ruins of Roman and Byzantine Sardis, as well as on the flat roofs of modern villages.

The site of Sardis, the capital of Cræsus' kingdom of Lydia, was a mile and a half south of Sart station, up the valley of the Pactolus.

On the east bank are the temple ruins, and above that the house of the archæologists who are now excavating them. The eaves of the house had unfortunately provided nesting-places for several pairs of Sparrows (*Passer domesticus*). At night the roof was the haunt of Scops Owl (*Scops giu*), whose melancholy note was to be heard at dusk on most evenings.

But for some patches of ploughed land and some small plantations of Lombardy poplars, the country immediately round Sardis is not cultivated. There is plenty of scrub covering the hills, composed chiefly of an evergreen oak, the *Paliurus* thorn, and *Vitex Agnus-castus*. Plane trees grow to a fair size in the lower valleys, and higher up *Pinus Halepensis* makes little woods, enlivened by small numbers of Blue Tits (*Parus cœruleus*).

Kestrels (*Falco tinnunculus*) were abundant everywhere; I should say I saw more individuals of that species than of any other. Magpies (*Pica rustica*) were equally common in the lower fields and on the hillsides. Crows (*Corvus corone*) were not uncommon, the Grey Crow (*C. cornix*) much rarer. Egyptian Vultures (*Neophron percnopterus*) were to be seen every day circling over the Acropolis, east of us, and often settling a hundred yards from the house. I had an excellent sight of eight Griffon Vultures (*Gyps fulvus*) sitting in a row above the Tombs hill. There were days when numbers of large birds of prey dotted the sky, but at too great a height for identification.

March 16th.—Several Chaffinches (*Fringilla cœlebs*) in the Pactolus wood. Noisy, but not singing. They were there for about a week and then entirely disappeared. Some Goldfinches (*Carduelis elegans*), singing, stayed several days. On April 12th, after a rainy morning, I found the copse full of Goldfinches; the twittering was deafening. They moved on that evening and were the last that I saw.

March 19th.—Riding to the Sulphur Baths at Alladejem up the valley of the Tabakchai, we disturbed a pair of Little Owls (*Athene glaux*) in the Byzantine ruins. Later I saw several more there, and have no doubt they nest in the numerous and convenient holes. A water-course diverted from the Tabakchai was thickly fringed with Water-Tortoises (*Clemmys caspica*). Purple, scarlet, and white anemones (*A. coronaria*) covered the

grassy level of the Hermus plain. Two Hen Harriers (*Circus cyaneus*) quartered the rushy ground.

That evening we climbed the Acropolis and had a magnificent sunset view with a glow on the snow-capped Tmolus. We put up two pairs of Chukar Partridges (*Caccabis chucar*), one pair from the very top of the ruins. It is extremely like the English Red Leg. A Turkish workman shot one some days later, and I was able to examine the small distinctions. Near the top I was attracted by a new and distinct note, a short but very mellow and flute-like song. This was the Nuthatch (*Sitta krueperi*), peculiar to Asia Minor, Palestine, and Syria. It was only recognized in 1863. It is a sprightly bird; after singing it poked its head from side to side, and hopped from the top of one bush to another with a lively movement. The white cheeks and throat and black stripe through the eye are conspicuous. I saw it again at Ephesus on April 17th, where a pair were evidently nesting in the ruined mosque.

March 21st.—A real crowd of small birds in the Pactolus river bed. The poplars and low bushes and brambles, then still quite leafless, were alive with them. My ears were met by a confusion of notes, and at least one strange warbler song.

There were the usual Goldfinches and Chaffinches. Several Willow-Wrens (*Phylloscopus trochilus*), very tame, uttered a feeble "wheet." A Chiffchaff (*P. collybita*) sang rather faintly. Linnets (*Linota cannabina*) were there, and a pair of Cirl Buntings (*Emberiza cirlus*). The latter sang loudly, showing no exhaustion from his journey.

I saw, too, a Serin Finch (*Serinus hortulanus*) and some Siskins (*Chrysomitris spinus*).

There were certainly several other species, but I failed to identify them. They were all on the move northwards down the valley. Some hours later the place was silent and deserted.

While I was watching, a small Grey Hawk which I took for a Merlin (*Falco aesalon*) made a dash among the small birds. It caught nothing, and only scattered them for a moment.

Further south up the river in some tall plane trees I met some Marsh Tits (*Parus palustris*). They were calling vigorously, and were in brilliant plumage. They looked to me larger than the British Marsh Tit, but this is difficult to say.

The black parts were intensely glossy black, the white a decided white, and the grey a cold grey without a tinge of brown or olive. I could not detect any difference in the note. With them were a Blue Tit and a pair of Great Tits (*Parus major*); the latter showed less yellow, and their note seemed less strident than the British bird's.

March 22nd.—I heard the trill of Bonelli's Warbler (*Phylloscopus bonellii*) from the house. It remained on the hillside, and I saw and heard it again on several days.

We rode to the Gygean Lake (Mermere Göl) through Sart, fording the Tabakchai, across the grassy, rushy plain, and reached the ferry over the Hermus in an hour. The low scrub was resonant with the grasshopper-like note of a Warbler. The land north of the Hermus was very marshy for three-quarters of an hour, then it rose and became stony, recalling parts of the Wiltshire downs that have gone out of cultivation. Tall spikes of last summer's hollyhocks had Corn-Buntings (*Emberiza miliaria*) sitting on them, and occasionally a Kestrel. Several sorts of Larks in pairs and small flocks, some distinctly crested, but whether the Wood-lark (*Alauda arborea*) or *Corydus cristatus* I could not make certain. Leaving the huge tumulus of Alyattes on our right we crossed three ridges of limestone and dropped on to the lake. It was a beautiful sight, absolutely smooth, with clear reflections of the brown reeds, a species of *Arundo*, ten or twelve feet high. The lake may be about eight miles long from east to west, and two miles across. A thick belt of reeds seems almost to divide it from north to south. According to the map the east end is marshy. Where we were it had a rocky edge.

Ducks were numerous and remarkably tame. There were Tufted (*Aethya fuligula*) and Pochards (*Æ. ferina*) in equal numbers, as well as several pairs of Shovelers (*Spatula clypeata*) in magnificent plumage. Teal (*Nettion crecca*) were shy and took to flight, but dropped again in sight.

A Pygmy Cormorant (*Phalacrocorax pygmaeus*) was drying itself on the bank, and flew across several times. It looks quite black as it flies, and the longish tail makes its flight not ungraceful. I am not sure whether another and larger *Phalacrocorax* that I saw was a Shag or a Cormorant.

A pair of Green Sandpipers (*Totanus ochropus*) enlivened one little bay with their clear note and swift flight, and were conspicuous with their dark, metallic plumage and white rumps. Dabchicks (*Podiceps fluviatilis*) were in fair numbers, appearing and disappearing among the reeds.

Coots (*Fulica atra*) and Moorhens (*Gallinula chloropus*) were abundant. Some Herons (*Ardea cinerea*) occasionally rose from out of the reed bed, flapped round and dropped again out of sight. Marsh Harriers (*Circus æruginosus*) circled without ceasing just above the tops of the reeds.

I saw a Dalmatian Pelican (*Pelecanus crispus*) at a great height. It has a fine, strong flight. This is the species "formerly inhabiting and (as shown by the remains of the young) breeding in England. Bones have been found in the peat of the Fens of the Bedford level, and in considerable numbers at Glastonbury, in Somerset." I saw several others on the water when we rowed to the middle of the lake. We thought ourselves lucky to come across a fishing-boat, but there was less to be seen from it than from the shore. I think there was a Swan (species unknown) at a great distance, and a large Warbler flew jerkily in and out of the reeds. The boat was packed with huge Carp with a most muddy smell, and we were glad to be landed.

Towards the west Gulls in large flocks flew over the water, but I could not get near them to say what species.

In some blackberry bushes on the shore were about twenty Purple-winged Starlings (*Sturnus purpurascens*). They flew in complete silence from bush to bush.

On our ride home we came across many flocks, large and small, of Larks. Some were certainly Calandra Larks (*Melanocorypha calandra*). Two Snipe (*Gallinago caelestis*) were flushed from a bog in the plain. A few Black-headed Gulls were on the Hermus.

March 23rd.—The first Stonechat (*Saxicola œnanthe*) arrived to-day. With it was a Redstart (*Ruticilla phœnicurus*).

March 24th.—A good sight of Ehrenberg's Redstart (*Ruticilla mesoleuca*). The white wing patch makes it easy to recognize.

March 26th.—The first Swallow (*Hirundo rustica*) skimmed the Pactolus. At Kassaba station House-Martins (*Chelidon*

urbica) were already on their nests under the eaves. It is curious that these should be so much in advance of the Swallows.

From Magnesia we drove to the Hittite rock carving, and saw on the way the first (and only) Hoopoe (*Upupa epops*). While climbing up to the carving I heard Krueper's Nuthatch, and saw several Ehrenberg's Redstarts.

March 27th.—The new arrival to-day was a Black-eared Wheatear (*Saxicola albicollis*). A pair remained on the hill near the tombs. A Stock Dove (*Columba oenas*) was brought to our larder. It was all but plucked when I saw it, but I feel no doubt of the species. Numerous Swallows flying over the excavations.

March 28th.—The sun really warm to-day. Bonelli's Warbler vociferous. A White-collared Flycatcher (*Muscicapa collaris*) in the river bed. Very tame and quite silent.

April 1st.—A pair of Red-rumped Swallows (*Hirundo rufula*) flying about the tombs hill. The light red rump looks almost white as they fly in the sun.

April 3rd and 4th.—On the Acropolis at Pergamon I saw a Black-throated Wheatear (*Saxicola melanoleuca*). This is the Eastern form of *Saxicola stapazina*. Two Ravens (*Corvus corax*) were flying across the valley of the Selinus, and croaking loudly. Doves, Kestrels, and Swallows were very abundant at Pergamon. The ruins of the Roman baths were covered with Storks at their nests.

Much of the road from Pergamon to Soma is a raised causeway passing through marshes, and I had expected to see many birds from it, but they were disappointingly few. The frogs' chorus was deafening.

April 5th.—The first Nightingales (*Daulias philomela*) arrived. They remained in the Pactolus copses, and one could often hear three birds singing at once. They sang early and late, and loudly during the hot morning hours.

A Whitethroat (*Sylvia cinerea*) was warbling its scratchy song. Like so many other birds that passed through the valley, it was the only one of its kind that I saw. A Common Wheatear (*Saxicola oenanthe*) is constantly among the columns, and I fear the excavations have disturbed its former nesting-place.

April 7th.—Very much warmer weather, and the planes are budding fast. The Red-rumped Swallows are evidently going to build on the tombs hill. From there I had an excellent view of a Roller (*Coracias garrulus*). It flew from tree to tree with a jerky flight up and a sharp turn, showing a beautiful turquoise blue. When perching, the light blue is still most conspicuous.

There were two Blue-cheeked Bee-eaters (*Merops persicus*) hopping and creeping about in some low bushes. The white and black markings on the head show well, as does also the gorgeous, bright green of the back.

April 8th.—I climbed the Acropolis hill at dawn and had a beautiful view over the shoulder into the Tabakchai valley, where one could see clouds of steam rising from the sulphur baths. Many Wheatears were singing—a song not unlike a Corn Bunting's. Several Cuckoos (*Cuculus canorus*) were calling, at first in the distant woods, and then all around me. One settled on the Acropolis wall. These were the first and only Cuckoos I saw or heard.

I was puzzled yesterday by a small bird with a blue-grey head and rufous markings. It was Cretzschmar's Bunting (*Emberiza caesia*); I saw it well to-day as it sat on a low bush and uttered a short "peep." High up were a pair of noisy Jays (*Garrulus krynickii* is the Asia Minor species). Lower down I watched a pair of Sardinian Warblers (*Sylvia melanocephala*) skulking among the bushes. Another pair I took for Rüppell's Warbler (*Sylvia rueppelli*) but could not swear to them, though the white streak going back from the beak and other plumage point decidedly towards that bird.

April 9th.—We ascended the course of the Pactolus. The valley narrows and the river pours through a rocky gorge. There are traces of quarrying for white marble, probably cut for the temple at Sardis. The lower gorge was full of House Martins and Swallows, above were Crag-Martins (*Cotile rupes-tris*). These look much darker than Sand Martins.

I just got a glimpse of a Dipper (*Cinclus cashmiriensis*), a bird whose absence hitherto had puzzled me.

We were some fifteen hundred feet above Sardis, and the vegetation had changed. *Arbutus andrachne* with smooth,

dark red stems made thick covert on the steep hillsides. It was being ruthlessly cut for charcoal. Judas trees were coming into flower, Madonna lilies and a purple *Aubrietia* grew in cleft rocks. There were sweet-smelling violets, a small iris, and grape hyacinths, none of which grew lower down. A bird of prey remains unidentified, but no one need be ashamed of being baffled by a Hawk. A pair seemed to have a nest in the rocks, and flew round and round in great excitement with cries like those of a Kestrel, though less shrill. They had rounded tails, and were chiefly of a sandy grey colour. Some that I saw from the cliffs at Pergamon appeared to be of the same species.

April 11th.—Swifts (*Cypselus apus*) arrived to-day. Six or eight were flying round the temple columns.

April 12th.—I saw a Spotted Flycatcher (*Muscicapa grisola*). Also in the river bed I had a good view of a new Wheatear (*Saxicola morio*), the Eastern form of *S. lugens*. It perched on a tree, flew up and down and returned to the branch. The other Wheatears, of which I think *S. melanoleuca* is the commonest, have increased, and many pairs are in the gullies above the house.

April 13th.—A Masked Shrike (*Lanius nubicus*) looking for insects in some bushes.

April 14th.—I left Sardis. Riding to the station I added a last bird to my list: a Red-backed Shrike (*Lanius collurio*).

This made seventy-five species identified.

NOTES AND QUERIES.

MAMMALIA.

Rudolphi's Rorqual (*Balænoptera borealis*).—It may be interesting, as a record of a little-known mammal in the British Isles, to state that a "Bottle-nosed Whale," forty-five feet in length, and estimated to weigh about thirty tons, washed up on the beach near Hauxley Point, about the middle of the Northumbrian coast, early in February, 1912, has proved to be an example of Rudolphi's Rorqual (*Balænoptera borealis*, Less.), of which we had no previous good record for Northumberland, though several of the allied species have been satisfactorily identified there, and from time to time more or less doubtful animals have been cast ashore. In September, 1872, a specimen of *B. borealis*, some thirty-seven feet long, was stranded and captured near Bo'ness, on the Forth, and its skeleton secured and prepared for the Anatomical Museum of Edinburgh University by Prof. Sir William Turner, who read a paper upon it to the Royal Society of Edinburgh on Feb. 20th, 1882, at which date it appears to have been the first authentic record for Great Britain. The skeleton of the Hauxley specimen has been secured for the Hancock Museum, Newcastle-on-Tyne, and I am indebted for confirmatory information of its identity to Prof. Meech. —GEORGE BOLAM (Ilkley).

AVES.

Nocturnal Movements of the Redwing (*Turdus iliacus*).—In the last number of 'The Zoologist' (*ante*, p. 72) Mr. F. J. Stubbs contributes some further interesting observations on "Nocturnal Redwings," upon which, if space allows, I should like permission to comment. Mr. Stubbs's strongest point seems to me to be the undoubted fact that the Redwing's "seep" or "tzee" is so much more frequently heard during the dark hours of October and November than the cries of other migrant Passeres; and it is not easy to understand why this should be so, on the ordinary view that normal migration is an all-sufficient explanation. Personally, I have never heard the Blackbird's softer but similar migration-note at night, a fact which has often puzzled me. The Song-Thrush (whose note can hardly be considered as very like that of the Redwing), on the

other hand, is to be heard on the move during autumn nights, but strangely infrequently in comparison with *Turdus iliacus*. I have failed to notice it during the months of July or August, the earliest record I can find in my notes being Sept. 24th, on which night (11 to 12 o'clock) several birds were heard. No nocturnal passage or movement of Redwings was noted during the same autumn until Oct. 12th. Fieldfares I have only heard by night on one or two occasions, but in some years diurnal migrations of this species on a large scale are to be observed in this locality, and Redwings at times accompany them. On Oct. 22nd, 1906, and again on Oct. 28th, 1910, Fieldfares were seen passing between 10 a.m. and 5 p.m. in flocks of fifteen to three hundred birds, each flock pursuing a similar line of flight, a point or two west of south. On both occasions a few Redwings accompanied their larger congeners, but only in the earlier moving flocks. The customary long-drawn "tzee" was emitted at intervals, in the same manner as by night.

If I understand Mr. Stubbs's remarks on the song of the Redwing, it seems clear that he is speaking of the subdued "rehearsing" or "murmuration" already referred to by Mr. F. D. Power (Zool. 1911, p. 431), and not to the genuine fully developed song. The latter I have never heard in its perfection in this district, although in spring a bird may be occasionally found attempting it; whereas the aforesaid "murmuration" is a common feature of mild days during winter and early spring. It might, as suggested, be possibly mistaken by an unpractised ear for a Starling chorus; the true song, I think, could not be confused with it.—S. E. BROCK (Kirkliston, Linlithgowshire).

Bad-tempered Blackbird (*Turdus merula*).—For three winters some poultry have been fed in a field adjoining this station, and, as usual, numerous small birds resort there for pickings. Amongst them is a hen Blackbird that behaves in a most extraordinary way. During these three winters she has always been there daily from the time the hens are fed until dusk (or now, in February, about 3 p.m.), attacking all other birds, and driving them away from the meal, &c., which is left. By way of explanation, I ought to say that these hens are only fed in the morning, as they are over a mile away from their owner's house, and so food is left lying about for their needs later in the day. As soon as the hens have satisfied themselves, and the small birds start to feed, this particular Blackbird attacks the Starlings, Thrushes, Sparrows, Robins, &c., driving them all a few yards away; but her greatest energies are kept for attacking her own species, especially the cocks, which she will not leave alone until

they take to the wing and go some twenty or thirty yards away ; whereupon she returns to drive off whoever may have arrived to feed in her absence. One day in December last a young cock Starling turned on her and mauled her pretty severely, after which she sulked for over an hour a few yards away, and only attacked Blackbirds and smaller birds for the rest of the day. Owing to several such lessons she now leaves Starlings severely alone, and is not so vicious towards Sparrows, Robins, and such small fry as formerly, but still spends several hours daily hustling Thrushes, and particularly Blackbirds, at every opportunity. She is a large bird, and is easily distinguished by her appearance and behaviour.—RICHARD ELMHIRST (Marine Biological Station, Millport).

Varieties of Woodcock, Starling, &c., in South-west Hants.—That Blackbirds with white patches in the plumage are no great rarity I am well aware, but this season I have heard from various localities of an unusual number of such specimens, several of which I have seen ; the most peculiarly marked was one in which the head, neck, and breast were of an unspotted white, the rest of the plumage the usual uniform black ; another in which the division of markings was somewhat similar, but the white was not so pure. My experience points to the fact that Blackbirds show the "white feather" most frequently about the head, neck, or shoulders, but an entomological friend told me that in his summer rambles, in a certain locality, he had many times seen a Blackbird with almost entire white wings and tail—in fact, his description was "more white than black when flying"—and, what was most remarkable, he always saw it within one hundred yards of the bush where he had first detected it, and it was there only a few weeks ago.

A Moorhen with a considerable amount of white about its plumage was killed in the autumn on the Avon, a few miles distant from the spot where my own specimen was shot a few years ago, as recorded (Zool. 1905, p. 144). I believe the specimen was preserved. I did not see it, but from description it had not so much white about it as my own. Early in December a very handsome Starling was shot, in which all the larger quill-feathers of both wings and tail were of a very pretty slate-blue colour edged with dark grey, which must have made it very conspicuous when flying with its comrades. It had been observed for the last two seasons, and its whole plumage was remarkably spotted and glossy.

At the end of November a small and very dark Woodcock was shot in one of the forest-bogs. I suppose it belongs to the small

dark race described by some authors, and whether native bred or not it is impossible to say. The whole plumage is of a very dark reddish brown with black bars, head and neck almost entirely black, and large conspicuous black blotches on the back; upper tail-coverts uniform dark red-brown, inclining to black towards the end, but the usual silvery white tips are visible; breast and under parts more black than brown. It was a male, weighed just under 10 oz., and had evidently been living well, as it was exceedingly fat and plump. The varied weight of individual Woodcocks is so extraordinary—ranging, I believe, from 7 oz. to 28 oz.—that the weight of the present example is in no way remarkable. — G. B. CORBIN (Ringwood, Hants).

Shags (*Phalacrocorax graculus*) inland in Cheshire.—Six of these birds were seen on Jan. 24th and 25th respectively in the village of Ashton Hayes, and during the days named (country covered with snow) they were seen on the church-steeple, dwelling-houses, and even on the branches of an *auraucaria* tree. Two were shot, and the remaining four disappeared from the village and were not seen again there. On Jan. 26th, however, a third specimen was shot, flying round the Waverton Parish Church-steeple. Two of the specimens have been presented to the Chester Museum. The stomachs of both birds contained a number of small (?) marine worms; being immature birds the sexes were undeterminable. — A. NEWSTEAD (Grosvenor Museum, Chester).

Wood-Sandpiper (*Totanus glareola*).—The mere fact of Mr. Greaves recording a party of five Wood-Sandpipers (*ante*, p. 36) is pretty conclusive evidence that he was right in his identification. We used, in the "seventies," often to meet with this species in the Aldeburgh marshes, and noticed their habit of moving about in small flocks, whereas the Green Sandpiper was usually found alone. The last record I have of the Wood-Sandpiper was in June, 1889 (*Zool.* 1889, p. 313), and then there were five together. I was then in the "North Field" at Aldeburgh, and the birds got up in the marshes near the dyke which forms the north boundary of the field.—JULIAN G. TUCK (Tostock Rectory, Bury St. Edmunds, Suffolk).

Common Sandpiper in Winter.—About the 10th of January last a specimen of *Totanus hypoleucus* was shot by Mr. Hyde Maberly at Crosshaven, Cork Harbour—a belated summer visitor. — ROBERT WARREN (Ardnaree, Monkstown, Co. Cork).

Little Auk (*Mergulus alle*).—In connection with the Little Auk "invasion" during the present winter, the following may be of interest:—On Sunday, Feb. 4th, a specimen was killed on the Chilterns at Ivinghoe, North Bucks. The bird was in very poor condition and unable to fly. Upon dissection it proved to be a female, apparently a bird of last season. Slight traces of spring plumage were appearing on the neck. The stomach was empty, and I was not surprised to find that the bird weighed only 3 oz. On Feb. 5th and 6th I noted at least five specimens hanging in Leadenhall Market, two of which I subsequently examined. The larger and better plumaged bird, which proved to be a male, weighed $4\frac{1}{4}$ oz., the other 4 oz. In the former the traces of spring plumage on the neck were very distinct. The stomachs of both specimens, which came from Norfolk, were empty. Another specimen, which I did not procure, was more fully advanced towards spring plumage. I might also remark that a friend of mine observed this species on the Essex coast during the same week.—PERCY W. HORN (Stepney Borough Museums).

Little Auks at Great Yarmouth.—The severe weather which prevailed during the first week in February wrought great havoc among the Little Auks. On this low, bleak coast, where there are no rocks to afford them shelter, they were at the mercy of the winds and waves, and being weak through scarcity of food, they were thrown up on the beach either dead or in a dying condition. I received one of these birds on Jan. 27th, and on Feb. 4th three were brought to me by the same individual, who informed me that another was picked up at Caister, two miles north of Yarmouth. As a last resource the strongest of them must have flown inland, as two others were picked up in the town, and one at Upton, twelve miles from the coast.—B. DYE (Row 60, Great Yarmouth).

Causes of our Rare breeding Birds disappearing.—I do not dispute Mr. Jourdain's objections to my remarks on the Golden Eagle decreasing in Scotland (*ante*, p. 75), for they may not be applicable to the present status of these birds in that country, of which I have no accurate knowledge; but they certainly apply to the time some years ago before the *owners* and *tenants* of the deer-forests in the Highlands and Western Islands of Scotland began their timely protection, which has *undoubtedly* saved the present race of Eagles from *extinction*. In Buckley and Harvie-Brown's 'Fauna of the Orkneys' a sad account is given of the persistent harrying of the nests, which resulted in the birds being permanently driven away from their

Orkney breeding haunts. Howard Saunders, in his 'Manual of British Birds,' says:—"But to the lowlands the Golden Eagle is now, at best, a rare visitor in the cold season. Its present breeding places are confined to the highlands and islands of the western coast, where, owing to the protection afforded by many of the proprietors of deer-forests, its numbers have to some extent *recovered* from the destructiveness of Grouse preservers." These two writers prove the sad state to which the Scottish Eagles were reduced by the raids of keepers, shepherds, egg-collectors, and skin-hunters until timely protection was afforded them.

As I dispute Mr. Jourdain's assertion that the near extinction of the Osprey in Scotland "is due to the slaughter of the birds on migration through *Ireland*, and duly *recorded* in the pages of the 'Irish Naturalist,'" I now give a correct list of the birds killed during the eleven years between 1900 and 1912, as reported in the 'Irish Naturalist.' Having again carefully searched its pages, I can find records of only *four* birds killed within the period named: One killed near Drogheda in 1907; two shot in Co. Sligo in November, 1907; one shot in Co. Fermanagh, on Loch Erne, Oct. 4th, 1909. I have not gone back over the pages of the 'Irish Naturalist' up to the date of its publication, merely taking the period I have previously mentioned; but if the records in the previous years compare with those of the last eleven, it will not show the amount of slaughter that would seriously diminish the numbers of northern Ospreys on their southern migration.

I now end the discussion by thanking the Editor for his patient kindness in keeping his pages open for so long to this controversy. Mr. Jourdain asks "Why the Kites of Wales should be dragged into the discussion." I do so, to show the difficulty of preserving our rare breeding British birds from the continuous attacks of egg-dealers, skin-hunters, and their agents; in proof of which I now quote a few lines from notes of the editor of 'British Birds' (in the last volume) on the present status of the Kite in Wales. He says:—"In 1909 seven pairs appeared, but only one young was fledged, though in 1909 fifteen birds were known to exist. This year, out of four nests watched six young are safe. It is *painful* to have to *admit* that this result has only been achieved by *force*—that is to say, the nests have been watched *night and day* to protect them from being robbed by the *collector* of rare British eggs or his *agent*." This needs no comment; the editor of 'British Birds' cannot be doubted. —ROBERT WARREN (Ardnaree, Monkstown, Co. Cork).

THE discussion between Mr. Robert Warren, our veteran sportsman and naturalist, and the Rev. F. C. R. Jourdain relative to the destruction of Ospreys has interested me. It commenced in the October number of the 'Zoologist' by Mr. Warren stating he had a postcard from an egg-dealer in Leeds, who was anxious to dispose of, amongst other things, "ten Golden Eagles' eggs and *fifty* Ospreys'," thus, says Mr. Warren, showing plainly why the Golden Eagles and Ospreys of Scotland are so steadily vanishing. Mr. Jourdain replied in the next number, rightly drawing attention to the increase of the Golden Eagle in Scotland—notwithstanding egg-collectors—and alleging that the Osprey is on the verge of extinction there "because of the wanton slaughter of the birds on migration through Ireland"—these barbarous murders being recorded in the pages of the 'Irish Naturalist'—for he is "inclined to think" that Ospreys shot in England are "generally" of Scandinavian origin; and as to eggs, he will "undertake to say" there is not a single British-taken egg among the fifty duplicate eggs of which Mr. Warren writes, and complains that he has "looked in vain" for some words of reprobation from Irish naturalists of note when these murders are recorded, and winds up, "Cannot Ireland be content with the destruction of her own fauna without robbing Scotland as well?"

This definite allegation of Mr. Jourdain, that the Scotch Ospreys are killed in Ireland, is still wholly unproved. May not Scandinavian Ospreys visit us as well as Woodcocks, Snipe, Snow Buntings, Rough-Legged Buzzards, &c.? and I submit that imaginary "fly-lines" and probabilities are "not good enough" to convince.

What are the facts? Since 1892, twenty years ago, seven Ospreys have been recorded in the 'Irish Naturalist' as *killed* in Ireland; not one of these was killed in Ulster save the last, and that one on the borders of Connaught. In Ussher and Warren's 'Birds of Ireland,' attention is drawn to the great preponderance of Munster records. Donegal is full of small lakes, and not a single Osprey has ever been seen there, nor in the adjoining co. Londonderry. Once only since 1892 has Lough Neagh, the largest sheet of water in the British Isles, been visited, and the distribution of the fifty-one Irish occurrences from 1832 up to 1900 is so remarkable that the authors of the 'Birds of Ireland' suggest that the Osprey "chiefly arrives along the south-east coast and passes south-westwards." I have devoted over thirty years to Irish bird migration, and do not believe in "fly-lines," unless supported by ample proof. Since 1832, eighty years ago, the Osprey has been met with in Ireland (but not

always killed!) about sixty times, of which only nine were in Ulster—across which province it might naturally be expected to travel on its way to and from the Scotch Highlands to Munster, where it has been seen on about thirty-three occasions. Under these circumstances I think Mr. Jourdain builds rather a large edifice on probability, for nobody can tell where the Irish Ospreys come from, and consequently to accuse Irishmen of destroying *Scotch* Ospreys is unfair. As to eggs—can we be sure that none were taken in Scotland since 1892? A clutch usually consists (*fide* Dresser) of three eggs—two clutches might produce six birds; what a tremendous weapon for destroying rare species is this clutch-collecting, for it kills three at a time! The high price of British-taken eggs is the strongest inducement an adventurous dealer has to possess them. And how can anyone “undertake to say” that there is not a single British-taken specimen among the fifty Ospreys’ eggs advertised in Leeds? At the annual meeting, held on 19th of last month, of the Irish Society for the Protection of Birds, at which I had the honour to preside, attention was drawn in the Report to the killing of Ospreys, and members were impressed with the desirability of preventing their destruction. In the ‘*Zoologist*’ for 1907, Mr. Williams expresses regret that such harmless birds should be killed. Seven are recorded as shot within twenty years in the ‘*Irish Naturalist*,’ and I have to thank Mr. Jourdain for the 1907 record, which is omitted from my index just published to eighteen volumes of that journal, as the reference appeared under another heading. It first appeared (like the 1908 occurrences) in the ‘*Zoologist*,’ and the 1895 record is copied from ‘*Land and Water*.’

Mr. Warren and the Rev. F. C. R. Jourdain are excellent ornithologists, and both alike lament the possible extinction of these splendid and attractive birds from Scotland; but let not this crime be attributed to Irishmen more than to Englishmen or Scotchmen on conjectural evidence and without comparative statistics, and let us praise rather than blame the editors of the ‘*Irish Naturalist*,’ ‘*Zoologist*,’ &c., for the records given, as they enable us to realize what is happening, which is the first step to prevention.—RICHARD M. BARRINGTON (Fassaroe, Bray, co. Wicklow).

I HAVE only shortly to say that with every word the Rev. F. C. R. Jourdain has written (*Zool.*, Feb. 1912, pp. 74–77) I am in perfect accord. For the better part of fifty years I have been intimately acquainted with our Scottish air-fauna. I have for at least twenty-five years assiduously collected every item—*any smallest scrap*—I

could find of information upon our rarer, and especially our disappearing, species; and again of those, most particularly, the *Osprey*, *Kite*, and *White-tailed Eagle*. Alas! to these, too, I have been obliged to add for special attention *some others* in later years. I have had lists drawn up of Ospreys, &c., killed in Britain, and I fully agree with what Rev. Mr. Jourdain says about that killing being the principal cause of their almost total extinction. Dealers may possess as many or more eggs of Eagles and Ospreys, but no person need tell me that those represent the eggs of British or Scottish Ospreys (or White-tailed Eagles). I do know that one person has been stated on good authority to possess an abnormal number of Ospreys' eggs, said to have been taken in Scotland. But I agree with Mr. Jourdain that taking eggs alone would not have reduced our Ospreys to the verge of extinction; but it is the *killing of the young migrants in autumn and also the birds returning in spring*, which I believe—along with Mr. Jourdain, and, I may add, with the late Prof. A. Newton, who always maintained the same—has correctly caused the decrease. That we have immigrants from Scandinavia and North of Europe is, I hold, an ascertained fact beyond dispute, and that these compose the bulk of those shot or otherwise destroyed principally in England—and in England principally in the eastern counties. Like Mr. Jourdain, my statement of this is based upon what I consider the *very easy study* of the "fly-lines" of the species. Last autumn, not far from this house where I am writing these notes, a single Osprey frequented a sheet of water, which lies in the centre of a large manufacturing area. Hearing of its arrival and stay of several days, I am glad to say I was active in its preservation, and by my representations I had that done. It remained quite eight days, and then left. I had also written to the R.S.P.B., telling the Secretary of the fact, and praying the Society to give notice to all the county authorities along the "fly-lines" through the counties to the south. Whether this was done or not, I *never* was informed by the Central London Authority! I can only hope that that bird after our care here had equal care given to it elsewhere in other counties. It is now some forty years since an Osprey was shot at this same place I speak of, which was brought to me in the flesh. That, too, was recorded in the 'Zoologist.' One further remark and I have done. Ospreys slain in, let me say, the Outer or Inner Hebrides and West of Scotland or amongst the lakes of "Lakeland," and the *few* which appear in the West Counties, and the *still fewer* which visit Ireland, are of all others those which are the most likely to become Scottish

breeding birds if left alone. Those which pass down the east coast from the Braes of Langwell, Beniedale, and the Ord of Caithness form the bulk of the Scandinavian migrants, *but* these flights of Ospreys are—or were, and might be again—subject to slight accessions from some of our Scottish sites. It must, then, I think, be perfectly evident to anyone who knows anything whatever about the subject wherein consists the principal cause of the extinction of our Ospreys and of some other species as well.—J. A. HARVIE-BROWN (Dunipace, Larbert, Stirlingshire, N.B.).

THE following quotation from the Eighth Report of the Irish Society for the Protection of Birds (p. 6) may be of some interest in connection with the above correspondence:—"We have looked up the records of Ospreys in this country [Ireland], and find that within the last twenty years nineteen birds of this species were seen, and that twelve of them were killed; Mr. Jourdain has, therefore, some ground for his strictures."—F. C. R. JOURDAIN (Clifton Vicarage, Ashburne, Derbyshire).

[This discussion has pursued its normal course, and is therefore now closed.—ED.]

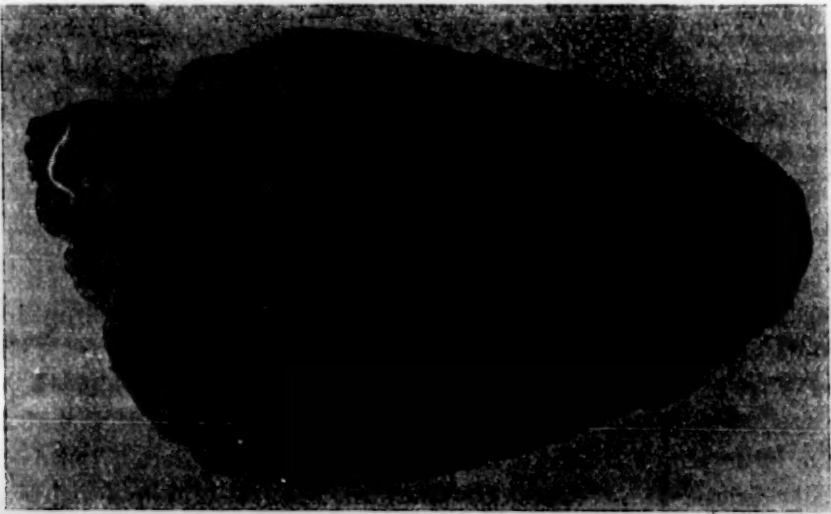
Snow and Wildfowl.—The snap of cold, snowy weather which distinguished the middle of January was provocative of considerable unrest among the various ducks and wildfowl generally off the east coast. There was a remarkable movement southward noticed on the 16th, when all sorts of ducks, including Wigeon, Sheld-Ducks, and others, were rushing through Yarmouth roadstead in big crowds. An unusual number of Oystercatchers were seen in the neighbourhood, while Dunlins came to Breydon in thousands. Being away from home on that date, I missed the bulk of the fowl, but next day they were still passing, and on the 18th I observed a flock of nearly seventy Brent Geese, with flocks of ducks, still moving in that direction. The Sheld-Ducks and Mallard that flocked to Breydon were tantalisingly out of reach of those who sought them with shoulder and punt-gun, the tides being so "poor," owing to the easterly wind, that they could not get near them. A few, however, were killed. I went through Saturday's market, which presented an unusual appearance, for on every third or fourth stall couples or more of duck were exposed for sale, Mallard and Duck being the commonest. Folks from the Broad district assured me that all the Broads had been alive with fowl, considerable quantities of Wigeon, Mellard, and Teal being noted. The Holkham Geese became some-

what demoralised by the stress of weather, and numbers skirted the north coast of Norfolk. Two Pink-footed Geese were shot at Palling, and brought to market. I saw one with which an attempt had been made to keep it alive, the wing having been cut. It fretted and died, and only weighed five pounds. Some Brent Geese were also on sale; for a number of years past this species has been rare off this coast. Three or four Little Auks were secured, and two or three Little Gulls. I saw a flock of Larks come straight in from sea on the 18th. A keeper living near Hickling reported thousands of Mallard and Wigeon on the Broad, and about five hundred Pochards, Tufted Ducks, and Scaups. He observed one morning fifty Sheld-Ducks, eleven Goosanders, two immature Black-throated Divers, one immature Red-throated Diver, two Smews (one a very old male), and several adult Golden-eyes, besides many Curlews, Dunlins, Ringed Plovers, and Sanderlings. Snipes were abundant, Jack-Snipe unusually so. On the 17th five Long-tailed Ducks were seen by another competent observer. On the 27th I saw two Smews in the market, one of them an exceedingly beautiful adult female; it is rather remarkable that adult males are always scarce here. Two or three Bitterns appear to have been seen; one found hiding in a stranded fish-basket was turned out by a gunner and promptly shot. It may be interesting to add that an observer, whose rambles favour West Norfolk, writing to a local paper, remarks that the Gadwall has not only become "settled" on the West Norfolk meres, but is decidedly increasing. He states that in 1850 a pinioned pair were turned out at Narford; that "these increased, spread to other pools in the vicinity, and have probably been strengthened by immigrants from the Continent. Some years ago it was computed that the number which frequented one private water alone was from 1400 to 1500 birds, and that upwards of 1000 pairs then bred in that part of the county. . . . I have seen flocks of over a hundred on six different sheets of water. On one occasion I saw a Gadwall on Fowlmere followed by twenty-two ducklings, evidently two broods." Such an easily bred fowl, and one quite on a par with the Mallard for edible purposes, should certainly be encouraged to extend its range.—A. H. PATTERSON (Ibis House, Great Yarmouth).

AMPHIBIA.

***Bothriceps huxleyi* in South Africa.**—The Karoo-beds (Permian-triassic) of South Africa are remarkable for the number of important fossil vertebrates they contain. These include many types of reptiles,

particularly a large number of the curious forms which approach very nearly to the mammals in structure, and probably were the ancestors of that group. Besides these the Amphibia are represented by the Labyrinthodonts, in which the complicated infolding of the enamel of the crowns of the teeth is a characteristic feature. A beautiful specimen of the skull of a small Labyrinthodont (*Bothriceps huxleyi*, Lydekker) from this region has recently been presented to the Natural History Museum by Mr. Distant, who received it from Mr. Robert Marley, who found it in the Berg districts near Natal. Nearly all the hard rock in which it was originally embedded has



BOTHRICEPS HUXLEYI Lydekker (about two-thirds nat. size).

weathered away from the upper surface of the skull (see fig.), so that the peculiar sculpture of the roofing bones, the nearly terminal nostrils, the orbits, and the well-developed opening for the median pineal eye are well shown. Specimens such as this, lying loose on the surface, and more or less weathered out of the hard matrix in which they were embedded, are probably not uncommon in many localities in South Africa, but for the most part they are overlooked and neglected. A collector who, like Mr. Robert Marley, would look out for nodules showing traces of such weathered-out skulls and bones might well find specimens which would add materially to our knowledge of the extraordinarily interesting extinct vertebrate fauna of South Africa.—CHARLES W. ANDREWS (British Museum).

NOTICES OF NEW BOOKS.

The Ox and its Kindred. By R. LYDEKKER. Methuen & Co., Limited.

THIS book constitutes a reliable and fully illustrated book of reference to the domesticated cattle of the world. It also gives a description of "British Park Cattle," which were long regarded as truly wild. Mr. Lydekker, in his preface, writes: "And I venture to hope that this volume will appeal alike to naturalists, to the owners of pedigree cattle, to cattle-breeders generally, and to archæologists." This hope will be fully realized. All the chief authorities have been consulted, and many references are given to valuable memoirs little known and less read on the subject.

In the present chaos as to a definition of the term "species," it is a great consolation to read the following dictum of Mr. Lydekker:—"It is quite certain that such animals as European cattle, humped cattle, gayal, yak, and the two kinds of bison severally represent perfectly distinct species, in spite of the fact that, under certain conditions, some of them will interbreed and produce fertile offspring when in a state of partial or complete domestication. Consequently, interbreeding or non-interbreeding cannot be taken as a test of the specific or racial status of any kinds of animal." In the specific descriptions of the present day that time-honoured test is never considered—for all museum purposes it is an obsolete rule—and it is well on logical grounds to have it disclaimed.

Prehistoric Man. By W. L. H. DUCKWORTH, M.A., M.D., &c. Cambridge University Press.

THE progress of anthropological study has departed in no respect from its evolutionary standpoint, but is marked by more caution on account of the greater—though still meagre—finds in the prehistoric remains of *Hominidæ*. In this manual Dr.

Duckworth has marshalled in small compass all the finds relating to the early days of our genus—even supposing that in the time to come only one genus will be recognized. Three divisions can now be formulated as expressed by the author:—

Group I. Early ancestral forms. Ex. gr. *H. heidelbergensis*.

Group II.

Subdivision A. *Homo primigenius*. Ex. gr. La Chapelle.

Subdivision B. *H. recens*; with varieties { *H. FOSSILIS*. Ex. gr.
Galley Hill.
H. sapiens.

The concluding paragraph is to the point:—"If progress since the foundations were laid by the giant workers of half a century ago appears slow and the advance negligible, let the extension of our recognition of such influences and possibilities be taken into account. The extraordinarily fruitful results of excavations during the last ten years may challenge comparison with those of any other period of similar duration." We may be on the eve of finding further remains which may largely qualify our previous conclusions on prehistoric man.

Butterfly-hunting in many Lands. By GEORGE B. LONGSTAFF, M.A., M.D., &c. Longmans, Green & Co.

DR. LONGSTAFF is a great lover of entomology and an ardent collector of insects in the field; he has seized every opportunity to follow his favourite pursuit; he made the best of his possibilities when attending the meeting of the British Association in South Africa, and also during several tours made in various tropical and subtropical countries; the results and itinerary form the substance of this somewhat massive but interesting volume. Some of the chapters are reprints of papers published by the author in the 'Transactions' of the Entomological Society of London, and have been revised and enlarged, and the introduction and the chapter devoted to "Some Early Reminiscences" recall old scenes and old friends to many of us.

Dr. Longstaff is an evolutionist who thoroughly accepts the doctrine of the "survival of the fittest," and may be described as a moderate "natural selectionist." One of the most interesting observations is his witness to the universality of the gesture language in mankind, long since so ably stated by

Dr. E. B. Tylor. By this process Dr. Longstaff made himself understood by a Blackfoot Indian, and by using the deaf and dumb signs as in England.

The volume contains many interesting bionomical observations, and is well illustrated.

More Animal Romances. By GRAHAM RENSHAW, M.B., F.Z.S.
Sherratt & Hughes.

DR. RENSHAW has resumed the publication of his animal romances. Equipped with his zoological knowledge, an eloquent pen, and a vivid imagination, his pages teem with life, and the environment is painted with a free hand; but, of course, the reader must always remember the title of the book—"Animal Romances." We do not suggest that these word-pictures are greatly overdrawn; they are, on the contrary, decidedly realistic, but the task is a difficult one, and the patient bird-watcher would no doubt sigh for the capacity to compose these graphic and lurid pages. The illustrations are very beautiful, and Dr. Renshaw transports his readers to regions which teem with animal life—in fact, his book fulfils the purpose of a zoological bioscope, but necessarily in many cases the impressions are mentally produced; they are not realisms, nor could they be expected as such. The book should find many readers on the border-land of science, and the only criticism we would hazard is as to whether the term "antediluvian world" is not somewhat archaic?

EDITORIAL GLEANINGS.

MR. C. HUTCHINS, of Omokoroa, Tauranga, New Zealand, who was brought up in a rural district in Essex, England, states in the 'Lyttelton Times' (Jan. 13th, 1912) that in the district in which he lives song-birds are losing their vocal powers. "We have Sky-Larks in large numbers, also Song-Thrushes, Blackbirds, Goldfinches, and other English birds, but not a song from one of them. The Thrush is the only bird that seems to try to sing, and his effort is a miserable failure. It is only a squeak compared with the loud clear notes of

former years. The Sky-Lark here is utterly devoid of song. In these days I never see it soaring aloft to sing. A short time ago I watched a Sky-Lark sitting on a post. He fluttered his wings and tried to sing, but the effort resulted in complete failure. This absence of song amongst the birds has been noticeable here for the past two or three years at least. I should like to know if the same circumstances have been observed in other districts."

In the 'Bradford Scientific Journal' (January, 1912), Mr. George Bolam gives a description of the "Fish Poisoning in the Wharfe on the 15th October, 1911." "One photograph represents the heap of dead fish collected by the keepers from the river, and was taken at Mr. Lancaster's farm on the Bow Beck on the 16th, when, as he informed me, it contained in all 1054 fish (no more were added afterwards), viz. 1003 Trout, 30 Grayling, 12 Eels, and 9 Barbel. The two largest of the latter were each about 31 in. long, and weighed together, I was told, close upon 18 lb. They have been preserved by the Ilkley Angling Club. Two of the next largest Barbel (perhaps 4 or 5 lb. apiece) are represented in the second photograph, and, having been given to me by Mr. Lancaster when the fish were about to be buried, have been presented one to Ilkley, and the other to Keighley Museum. 790 Trout collected on the Sunday, 15th October, weighed together, approximately, $1\frac{1}{2}$ cwt., the largest not exceeding about $\frac{3}{4}$ lb. 213 were added to the heap next morning in my presence, but not weighed; they, however, did not run large. Some of these were brought by the Denton keeper, and no more were afterwards collected. The largest Grayling would be about $1\frac{1}{2}$ lb.

"The poisoning arose from an escape of ammoniacal liquors from the gasworks, owing, I believe, to some repairing or relaying of pipes. This had been finding its way into the river for three or four days before any harm was done to the fish, though no doubt it must have been stronger or escaping in greater quantity on the night of the 14th, when the mischief arose; but for several days previously the smell from the drain mouth had been very bad, highly objectionable to those dwelling near it, as well as to anyone having occasion to pass that way, and offensive to the nose for a considerable distance. No ill effects were noticed until Sunday morning, the 15th, when large numbers of dead and dying Trout were observable."

